SNC Reference Number
(enter if previously assigned)

SNC 080213

PROJECT SUMMARY

County: Lassen County

Applicant: Lassen County Fire Safe Council, Inc.

Project Title: South Ash Valley Riparian Monitoring Project

PROJECT GOAL

Develop a pilot study to investigate the effects of landscape scale western juniper (*Juniperus occidentalis*) removal in South Ash Valley on soil moisture and vegetative productivity and composition within riparian/meadow habitats.

PROJECT SCOPE

SNC grant funds will be used to set-up, collect data, analyze data, and report results for three riparian/meadow monitoring sites in South Ash Valley (15 miles SE of Adin, CA in Lassen County, CA) over a three-year period. Landscape scale western juniper removal is taking place in South Ash Valley in order to restore sagebrush steppe habitat. Projects are occurring on Private Land (Ash Valley Ranch) and Bureau of Land Management (BLM) – Alturas Field Office managed lands. Little or no research has been conducted on how western juniper directly influences any of the specific components of the water budget for a given watershed (Miller et al, 2005). There is a significant amount of anecdotal evidence indicating that removal of western juniper results in increased water availability, expansion of riparian/meadow habitats, and increased vegetative productivity. This pilot project will result in scientific data that can be used to assess soil moisture and vegetative response following western juniper removal.

The University of California, Cooperative Extension, Lassen County and faculty at the University of California, Davis (UC Davis) have assisted in developing the methods for this project and will act as quality control to ensure that riparian monitoring sites are set up properly. This project will act as a pilot study for a larger-scale study in Lassen and Modoc County that UC Davis faculty intend to implement in the future. Each of the three riparian monitoring sites will include six soil moisture transects using soil sensors and data loggers to monitor volumetric water content of the soil, 18 cages to monitor vegetative productivity to see if more standing crop is available in treated vs. untreated areas, and six line transects to monitor plant composition to analyze whether riparian areas expand into upland areas post-treatment. At each site, half of these transects and cages will be in areas that will receive treatments and half will be in untreated areas. Data will be collected during the months of April through June over a threeyear period. This is the critical growing period and after June soil moisture becomes negligible and plant growth subsides within the arid environment of South Ash Valley. The first year's data will be collected prior to treatments and the next two years will be post-treatment data. Data will be analyzed to see whether soil moisture increases and/or is available for a longer period of time in treated vs. untreated areas.

Rain gauges will be set up at each of the three riparian monitoring sites and rain

and temperature data will be collected from the three closest weather stations: Hayden Hill (10 Miles W of project site); Grasshopper Valley (5 Miles S); and Ash Valley (5 Miles N). This information will be used to analyze year to year differences in data.

Annual preliminary reports will be submitted to the SNC with year-to-date data collected and after the collection of three years of data, a scientific report will be developed presenting the results of the study and a poster-presentation of the results that can be used to share the results at community events and conferences.

Miller, R.E., J.D. Bates, T.J. Svejcar, F.B. Pierson, and L.E. Eddleman. 2005. Biology, Ecology, and Management of Western Juniper. Technical Bulletin 152. Oregon State University, Agricultural Experiment Station.

LETTERS OF SUPPORT

David Lile, County Director UC Cooperative Extension, Lassen County

SNC PROJECT DELIVERABLES AND SCHEDULE

DETAILED PROJECT DELIVERABLES	TIMELINE
Set-Up of Riparian Monitoring Sites	March 2009
Data Collection (Year 1)	June 2009
Six-month Progress Report	August 2009
Six-month Progress Report w/ Preliminary Data Report – Year 1	February 2010
Data Collection (Year 2)	June 2010
Six-month Progress Report	August 2010
Six-month Progress Report w/ Preliminary Data Report – Year 2	February 2011
Data Collection (Year 3)	June 2011
Six-month Progress Report	August 2011
Final Report with Scientific Report and Poster Presentation discussing the results of the monitoring/research	January 2012

SNC PROJECT COSTS

PROJECT BUDGET CATEGORIES	TOTAL SNC FUNDING
Set-up of Three riparian monitoring Sites (including consultant, travel to sites, and soil probe equipment and supplies)	$23,500
Data collection – 3 years (Consultant time and travel to sites)	$17,600
Reporting of year-to-year data results (2) (Consultant)	$ 1,500
Six-month Progress reports (5) (Consultant and Director)	$ 1,875
Final Scientific Report and Poster Presentation discussing the results of the Project (Consultant)	$ 3,500
Final Progress Report (Consultant and LCFSC Director)	$ 675
LCFSC Grant Administration	$ 2,400
SNC GRANT TOTAL	**$50,000**